Many date the nation's terrorism preparedness efforts to the aftermath of September 11, 2001. Indeed, the last two years have witnessed the launching of a number of high-profile efforts, including the establishment of the homeland security advisory system, major increases in federal spending on terrorism prevention and preparedness, and the creation of the Department of Homeland Security. However, significant efforts to ready America's front-line emergency personnel to contend with terrorist use of unconventional weapons really began when Senators Richard Lugar (R-Indiana) and Sam Nunn (D-Georgia, ret.) seized on Aum Shinrikyo's 20 March 1995 sarin gas attack in Tokyo as a harbinger of possible terrorist attacks in the United States. With the Domestic Preparedness Programs segment of the 1996 Defense Authorization Act, they and Senator Pete Domenici (R-New Mexico) kicked off a series of training and equipment programs to increase the ability of America's largest metropolitan areas to confront unconventional terrorist attacks.

In its report "Emergency Responders: Drastically Underfunded, Dangerously Unprepared," the Council on Foreign Relations terrorism task force rightly points out that a great deal of work remains if front-line US responders are to be as ready as possible to contend with the disasters that terrorists or, more likely, Mother Nature could bring their way. Not only is the Council's report accurately titled, the major recommendations of this report are right on target. I say this with conviction because when I delved into the state of preparedness on America's front lines with research involving responders of all disciplines from 33 US cities in 25 states, I found them drastically underfunded as well. The shortfalls in emergency response funding can be seen in US cities, but budget tallies tell the tale as well. According to the Office of Management and Budget, of the total $8.4 and $8.7 billion that the US government spent on defense against terrorism in 2000 and 2001, respectively, only $315 and $311 million reached front-line US responders in the form of training, planning, and equipment grants in those two years. Since the publication of *Ataxia: The Chemical and Biological Terrorism Threat and the US Response* in October 2000, I have continued to interact regularly with the full spectrum of emergency personnel from a great many US cities.

Congress and the Executive Branch should take note that many firefighters, police officers, paramedics, public health officials, health care providers, and emergency managers have told me they have yet to see a dime of the federal terrorism prevention and preparedness monies appropriated since September 11th. Not only have federal terrorism preparedness dollars not trickled down to many front-line responders, local budgets that are so tight that fire chiefs cannot replace worn out respirators and public hospital administrators are pinching pennies to buy new gurneys. While insufficient funding partially explains why America's front-line responders are not as prepared as they could be, thank goodness they will do their utmost to save the lives of their fellow citizens should calamity strike, even if they lack the best equipment and are not trained in the latest response techniques.

Public safety personnel and health care providers risk their lives during disasters like the September 11th attacks, the 19 April 1995 bombing of the Murrah Federal Building in Oklahoma City, and the 17 January 1994 Northridge earthquake, just as they do on a daily basis when armed robberies, hazardous cargo accidents, and

tornados harm US communities. For that reason, those who set policies and make decisions about how to spend US tax dollars owe emergency response personnel and all Americans more purposeful and well-conceived terrorism prevention and preparedness programs that focus on the front lines instead of inside the beltway. At the very least, as the Council's task force observes, Congress should dispense with evenly dividing the "spoils," not to mention its pet programs, and make terrorism preparedness funding decisions instead based on population density and the comparative vulnerability of various locations to terrorist attack.

So, to begin with, the key to domestic preparedness lies in getting taxpayers' dollars channeled to readiness at the local level, where improved response capacities will better arm public safety and medical personnel to contend with disasters, whether natural, accidental, or intentional. Therefore, I applaud the Council's recommendation to increase dramatically federal terrorism prevention and preparedness spending at the local level.

Charting A Practical Course for Long-term Terrorism Readiness

Well-considered investments are better than hasty ones, and US policy makers made numerous major spending decisions rapidly after September 11th. The Council on Foreign Relations found, as did I in research for *Ataxia*, that certain approaches are needed to get the most preparedness bang for US tax dollars. Newcomers tend to think that if only emergency personnel had the right equipment, they could respond well. True, equipment is an important part of the response equation and more funds are needed for personal protective gear, field detectors, laboratory analysis equipment, and antidotes, among other items, but emergency personnel also need to be well trained, including the regular practice of skills and use of equipment in field exercises.

Should Congress inquire it is likely to find, like I did, that a relatively small fraction of US front-line response personnel have made it into the classroom for any dedicated or in-depth terrorism response training. In particular, far too many health care givers, 9-1-1 call dispatchers, and police have not received terrorism response training. Moreover, as the Council's terrorism task force also recognized, little of the training provided to date has involved guidelines or standards that the different response disciplines agree should be institutionalized and upheld by practitioners.

Institutionalization of professional standards is the time-tested and commonsense approach that underpins the all-hazards, echelons-of-response system that both states and cities know and advocate. If preparedness is truly to take hold nationwide on the front lines and be sustained in perpetuity, then appropriate terrorism response standards belong in the local and state training academies, as well as in the nursing and medical schools. Institutionalization is the most cost-effective way to spread training geographically and build a tiered response capability.

Roughly seven years into the domestic preparedness effort, the time has come for Washington to turn training over to the appropriate professional and local entities that will take preparedness forward more systematically and cost effectively. No overarching structure is in place, however, to move any of the entities concerned

smartly forward to create and perpetuate terrorism response standards. Given the advantages that institutionalization offers, I stated in Chapter 7 of *Ataxia* that Washington could best demonstrate its seriousness about nationwide preparedness by working diligently with local responders, professional organizations, and governors nationwide to develop, roll out, and institutionalize standards according to an agreed time line. The federal government's role is to be the catalyst and convener that prods the tangle of entities to get this important job done. Until that occurs, training lacking in standards will be implemented unevenly, in pockets. Perhaps even a decade hence, the majority of US responders will still not be appropriately trained. Specification of standards and institutionalization of training clearly make more sense than that.

New Governing Rules for Exercises

Regular exercises, both in the field and so-called tabletop decision-making drills, are essential to preparedness. If specialized equipment remains parked in a warehouse and emergency personnel do not test seldom-used plans and skills, then preparedness atrophies. Exercises can be large, extremely orchestrated, pre-notified affairs such as TOPOFF I and II, in which case their utility often lies less in their actual conduct than in the extensive preparations prior to the event. Leading into a big exercise, local personnel meet frequently to revise plans and capabilities so that they look their best during the exercise. To a lesser extent, this type of polishing also occurs with smaller local drills.

Exercises would be more valuable learning experiences if two important adjustments were made in how they are conducted. First, the planning and polishing that takes place before an exercise is needed and productive, but to obtain a more realistic test of response preparedness, the exercise itself should be initiated with no or as little notice as possible. A no-notice exercise means that in larger drills, federal assets would not be pre-picked and pre-staged, like they have been in TOPOFF and other drills involving federal personnel. The terms of the exercise should specify that teams deploy as notified. While the general nature and identity of the exercise location(s) would certainly be known beforehand and the timeframe of the drill agreed within a window of several months, a handful of local officials should have the discretion to trigger the onset of exercises. This approach would require everyone to dispense with the comfortable claims of what they could do and reveal more about what they actually can do. A more genuine and probably sobering measure of federal capabilities could be taken, and the outcome of the exercise could better inform federal, state, and local plans, programs, and capabilities.

More often than not, however, the real lessons of exercises large and modest are not accurately conveyed, a problem that points to the need for a second reform of the rules that govern exercises. Because exercise after action reports are subject to Freedom of Information Act requests, they are written so that they smooth over the problems that the drill uncovered, showing local, state, and federal response agencies in their best light. Emergency response officials have been burned unfairly when politicians and press access and use exercise reports for political gain and to generate sensation headlines. Local response personnel note that the other reason that after action reports often are not worth reading is that contractor-prepared reports tend to

be vapid, cookie-cutter documents. These circumstances stymie the learning process and therefore undercut opportunities to improve response plans, practices, and capabilities after drills.

To obtain the full preparedness benefit from exercises conducted with federal dollars, Congress should consider making after action reports exempt from Freedom of Information Act requests. In addition, Congress should weigh a requirement that experienced, non-local, professional responders serve as exercise observers and lead the "hot wash" evaluations immediately after drills that form the foundation of exercise reports. Absent such reforms, front-line responders will continue to experience lessons the hard way, time and again, but they are unlikely to learn from their experiences and make the appropriate institutional changes to improve response plans, capabilities and practices.

Capturing Lessons Learned and Best Practices

In a related point, the Council on Foreign Relations urges Congress to establish within the Homeland Security Department a National Institute for Best Practices in Emergency Preparedness that gives emergency responders access to best practices and lessons learned via the worldwide web. One of the things that emergency personnel have told me most frequently is that they wanted to benefit from the experiences and innovations of their fellow responders. As Chapter 6 of *Ataxia* documents, emergency response personnel everywhere are confronting similar obstacles. In some jurisdictions, emergency response officials have made noteworthy progress in scaling some of the significant hurdles associated with chemical and biological disaster response. Others who are still struggling to put various response systems and capabilities in place could save time and resources if they understood how their contemporaries figured out the way to: harden possible targets against terrorist attack; overcome the decontamination bottleneck at hospitals; provide mass prophylaxis with a minimum of health care workers; get hospitals to work together regionally; take a cheap shortcut to comprehensive, redundant emergency communications; or institute syndromic surveillance so that leading edge indicators of a disease outbreak can alert emergency personnel to a covert bioterrorist attack or a naturally occurring eruption of disease. Sharing this type of knowledge will enable emergency response personnel across the country to get better prepared more rapidly than if they had to recreate the wheels already discovered by others.

Until recently, I was involved in just such a best practices/lessons learned project, sponsored by the Memorial Institute for the Prevention of Terrorism in Oklahoma City. If current plans hold, the Memorial Institute will soon debut a website that captures the type of knowledge that responders seek, namely the details of why, how, and what emergency personnel did to develop these practices; the unintended consequences of establishing these practices; how problems encountered were handled; and, the modifications made to the nascent practices to improve them. The Memorial Institute's project could well fulfill the objectives of the Council's recommendation by collecting and propagating via a secure website at no cost to front-line personnel the cutting edge, tricks-of-the-trade knowledge that countless responders have told me they want and need.

Hammering Out Burden-sharing Arrangements

Yet another major point that the Council's report raises is the need for federal, state, and local governments to come to terms about responsibilities and commit the fiscal resources to meet them. The original Domestic Preparedness Programs were structured as a cost-sharing arrangement, such that the federal government provided training and equipment while city governments paid local labor costs. Even after September 11th and given the press of requirements to provide daily governmental services, it can be an uphill battle to get response agency chiefs, city councils, hospital officials, and mayors to authorize the overtime labor costs for training and the other expenditures that accompany terrorism preparedness (e.g., equipment maintenance). One city emergency manager told me that preparation for an unconventional terrorist attack rated "somewhere below the likelihood of a tsunami and a step above an alien invasion."

An important part of sustaining preparedness concerns how to pay the bills for capital improvements, equipment replacement and maintenance, and exercises. The Council on Foreign Relations is right to stress the urgency of having federal, state, and local authorities settle this matter. Front-line emergency personnel tell me that preparedness gains have already begun to degrade in some cities. Unless a long-term cost-sharing arrangement is created, both the local and federal investments to date could slide into reverse. In Chapter 7 of *Ataxia*, I proposed such cost-sharing alternatives as ongoing federal funding, state and local disaster preparedness trust funds, and local user fees. A popular saying among politicians is that no time is the right time to discuss higher federal budgets or new local taxes. Hopefully, September 11th changed the willingness of federal, state, and local officials to begin this long overdue discussion.

Inside Vs. Outside the Beltway Investment Perspectives

To find a major point of disagreement with the Council on Foreign Relations task force on terrorism, I have to resort to last year's task force report. In "America---Still Unprepared, Still in Danger," released in October 2002, the Council recommended that Congress triple the number of National Guard Civil Support Teams. Given the astuteness of their other recommendations, the Council's backing of this politically popular placebo program was disappointing. I again urge Congress to consider the evaluation of these teams offered by the front-line responders, including some serving in the National Guard, whom I interviewed for *Ataxia.* I convey their views with utmost respect for the service that uniformed men and women, both active duty and reserve, perform for our country. Furthermore, I would note that local emergency response personnel stated their intent to call on the National Guard for the types of support that the Guard has traditionally provided so well after disasters, such as help with logistic and public safety missions.

However, with regard to the National Guard Civil Support Teams, the message from the front line is unified and clear: They have minuscule, if not negative, utility in disaster response, and the resources that they consume could be much better applied locally, where they could make a real preparedness difference. The Civil Support Teams are stocked with top-of-the-line equipment and are often trained by front-line

responders, but they have practically zero emergency response experience. Lack of *bona fide* emergency response experience is why local veteran responders are reluctant to substitute the advice of Civil Support Teams for their own, seasoned judgments. In the mid-May 2000 TOPOFF exercise, the Civil Support Team in Denver insisted that it had identified the mystery biological agent with SMART tickets, which have such high false positive and false negative rates that numerous cities refused to buy them. The team in Portsmouth lacked the technical expertise to understand the minimal hazard posed by mustard on a chilly, 49-degree day. To old hands at epidemiological investigations and hazardous material operations, the absurdity of these two anecdotes is readily apparent. The deputy director of one city's Office of Emergency Management bluntly told me that "The good thing about those teams is that it takes them as long as it does to get here."

On that point, the New York Civil Support Team arrived at the scene roughly a dozen hours after planes struck the World Trade Towers and proceeded with environmental monitoring that was redundant of efforts undertaken hours earlier by New York City agencies as well as the US Environmental Protection Agency. The dynamics of a chemical disaster response are such that the Guard's teams cannot arrive in time to make a life-saving difference. In the moments after Aum Shinrikyo's sarin gas attack against the commuters in Tokyo's subway system on 20 March 1995, local transit workers, police, firefighters, and health care providers aided people gasping for air, some in need of quick administration of the nerve agent antidotes to save their lives. The attack unfolded from 7:46 to 8:01 am. The first patients reached the nearest hospital less than 30 minutes later. The Japanese Self Defense Forces dispatched its special chemical defense units downtown at 10:10am. Although these units were located in Tokyo's outskirts, the teams, caught in huge traffic jams, did not reach the attack scene until two and a half to roughly five hours later. The victims of the attack had long since been cleared from the scene. Not only will Civil Support Teams be challenged to reach the scene of a disaster any sooner than the Japanese Self Defense Forces did in Tokyo, their applicability in a biological disaster is truly marginal. The four-person medical component of the Guard's Civil Support Teams is a drop in the bucket of the medical personnel that would be needed in an experiencing a major disease outbreak.

To those accustomed to overseeing billion dollar budgets, this National Guard Civil Support Team program might not seem so ill advised. Please consider, however, how this program's budget could be put to uses that would make a measurable preparedness difference on the front lines. As the chart below indicates, the National Guard states that it costs over $2 million to equip a Civil Support Team with chemical and biological detection gear, $7.4 million to stand up---organize and train---a team, and $3.2 million per year to maintain a Civil Support Team. A total of $176 million will be needed each year to maintain the full compliment of fifty-five Civil Support Teams. Were these monies instead invested in various equipment items for front-line career and volunteer responders who could be at the scene of a disaster within minutes rather than hours, then arguably America would be better prepared to grapple with terrorist attacks. For example, police officers are greatly concerned because they do not have appropriate respiratory protection to allow them to stay on the beat if

terrorists employ unconventional weapons. With $176 million, over 586,600 police officers could be equipped with a high performance mask that has canisters to filter extremely toxic industrial and even warfare chemicals, such as the MSA 1000 CBA-RCA mask. Other examples of how these funds could be spent are listed below, working from the high end of the cost estimate ranges for items found on Standardized Equipment List published by the Office of Domestic Preparedness.

Comparative Investments: National Guard Civil Support Teams vs. Equipment for Front-line Responders.

	NATIONAL GUARD CIVIL SUPPORT TEAM COSTS*			
	Equipment Costs Per Team	**Stand-Up Costs Per Team**	**Yearly Maintenance Per Team**	**Total Yearly Maintenance for 55 Civil Support Teams**
	$2,000,000	$7,400,000	$3,200,000	$176,000,000
MINIMUM NUMBER OF SELECTED ITEMS THAT CAN BE PURCHASED FOR THE ABOVE AMOUNTS**				
FRONT-LINE DISASTER RESPONSE EQUIPMENT**				
Level A Protective Equipment (certified, reusable, disposable)	1,000	3,700	1,600	88,000
Powered Air-Purifying Respirators (tight-fitting, full face piece, with chemically resistant hood, appropriate cartridges)	3,333	12,333	5,333	293,333
Boundary Marking Tape (yellow, red, etc.)	100,000	370,000	160,000	8,800,000
Air Compressors (to refill respirator canisters)	6,667	24,667	10,667	586,667
Generators	6,667	2,467	1,067	58,667
Mask Leak/Fit Testers	67	247	107	5,867
MINIMUM NUMBER OF SELECTED ITEMS THAT CAN BE PURCHASED FOR THE ABOVE AMOUNTS**				
Helmet-Mounted Lighting Systems	133,333	493,333	213,333	11,733,333
Tactical Body Armor	667	2,467	1,067	58,667
Cooling Garments (to manage heat stress)	4,000	14,800	6,400	352,000
Fire Resistant Gloves	33,333	123,333	53,333	2,933,333
Robots (basic bomb mitigation, remediation)	13	49	21	1,173
Lifting Devices (air bag systems, hydraulic rams, jacks, ropes, etc.)	133	493	213	11,733

Bull Horns	18,182	67,273	29,091	1,600,000
Land Mobile, Two-way In-Suit Communications (secure, hands-free, etc.)	400	1,480	640	35,200
Multi-Channel Radios (encrypted)	400	1,480	640	35,200
Gas Chromatograph/ Mass Spectrometer	100	370	160	8,800
Portable Biological Air Sampler	167	617	267	14,667
Liquid, Solid, or Air/Vapor Chemical Sampling/ Evidence Kits	2,000	7,400	3,200	176,000
Pressurized Sprayers (for decontamination)	4,000	14,800	6,400	352,000
Traffic Cones, Directional Signage (in multiple languages/ pictographs)	4,000	14,800	6,400	352,000
Video Assessment/Cameras	4	15	6	352
Body Bags (heavy-duty)	20,000	74,000	32,000	1,760,000
Disposable Emergency Blankets	666,667	2,466,667	1,066,667	58,666,667
Sterile Dressing (assorted sizes)	100,000	370,000	160,000	8,800,000
Endotracheal Tubes	66,667	246,667	106,667	5,866,667
Cyanide Antidote Kits	6,154	22,769	9,846	541,538
Doxycycline (TAB 100 mg 500s)	25,000	92,500	40,000	2,200,000

Notes: * Lt.Col. Thomas Hook, chief of the National Guard's Civil Support Team program provided costs for various aspects of the program to Morgan Courtney of CSIS in a 5 September 2003 conversation.
** Prices of equipment items taken from the Office of Domestic Preparedness' State Domestic Preparedness Equipment Program Standardized Equipment List. A price range (e.g., generators for $400-$3,000 each) was frequently given. The number items that could be bought was calculated based on the highest cost estimate for each particular item.

The refrain heard inside the beltway when the National Guard or federal response teams are criticized as redundant and unable to reach the site to accomplish their asserted missions is that creating and enhancing teams does not really cost much—just a few million dollars here and there. A million dollars may be pocket change in the Pentagon's budget, but it is serious money on the front lines. Moreover, a few million poorly spent in several programs adds up to a tidy lump sum. As the table above shows, hundreds of thousands of front-line responders could be better equipped if Washington were to ax just the National Guard Civil Support Team program. Imagine what could be done with the funds if Congress halted other redundant, ill-conceived terrorism response programs.

Concluding Observations

The pragmatic steps to better local terrorism preparedness are clear. Washington can take the smart route to enhance terrorism and disaster preparedness nationwide or it can continue to go about this in an expensive and inefficient way. National preparedness lie not in more federal bureaucracy, but in such commonsense policies and programs such as:

- The bulk of federal funds need to be devoted to multiyear grants that enhance readiness at the local level, where an increase in skills, training, and equipment would make a genuine life-saving difference. Even if terrorists never strike again in this country, such investments would be well worthwhile because they would improve the ability of hometown rescuers to respond to everyday emergencies.
- Drills at the local, state, and federal levels are necessary because plans, equipment, and skills that are unused for extended periods of time often do not work fully when emergencies occur. Exercises would be more worthwhile if they were conducted on a no-notice basis and candidly evaluated without fear of undue penalties for poor performance, thereby allowing response deficiencies to be corrected.
- Appropriate steps should be taken to see that all frontline response disciplines benefit from the development of professional standards and the institutionalization of terrorism response standards in the nation's training academies, universities, and schools.
- Federal, state, and local officials need to develop and move forward with a plan to share costs and thereby sustain preparedness over the long term.
- Congress should exercise its oversight responsibilities vigorously, eliminating redundant and poorly designed programs and diverting those funds instead to preparedness efforts at the local level.
- Last, but certainly not least, an essential element of streamlining and coordinating government programs lies here, in Congress. So long as congressional oversight is fractured, individual federal agencies may continue to exploit the situation to the advantage of their own institutional interests and the detriment of coordinated, cost-effective programming. Congressional oversight sorely needs to be consolidated formally, as the Council also suggests, in the House Select Committee on Homeland Security and the Senate Government Affairs Committee.

Those who know first-hand the tremendous demands of responding to a disaster have a saying: "All emergencies are local." Heroic actions following the 1989 Loma Prieta earthquake, Aum Shinrikyo's 1995 poison gas attack, and September 11th underscore the basic truth of who saves lives when natural or manmade calamity strikes. In such circumstances, the lifesavers are not federal response teams that swoop in from across the country, but the local firefighters, police, paramedics, nurses, and physicians.

The soundest policies are based not on book learning and hypotheses, but rather on real life experience. As is well known, real life is what exists outside of Washington's beltway. When it comes to crafting the best policies and programs to enhance this nation's ability to prevent and respond to terrorist attacks, Congress should seek out, learn from, and be guided by this nation's most experienced emergency planners and

responders. The next time that you are in your home districts or, for that matter, anywhere else in the country, drop by a fire or police station, a hospital, a public health laboratory, the public works department, or an emergency operations center and ask front-line emergency personnel to explain the commonsense keys to streamline federal programs and cut costs while improving local abilities to prevent, mitigate, prepare for, and respond to terrorist attacks. Mr. Chairman, Members of the Committee, I close asking that you listen closely and heed the counsel of America's best, brightest, and bravest emergency response professionals before you cast votes related to homeland security in the weeks, months, and years to come.